

Application No. 10/602,128
Amendment. dated September 10, 2004
Reply to Office Action of June 10, 2004

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 4, 5 and 7-13 as follows:

1. (Currently Amended) A magnification loupe carried by a user wearable device, comprising:

a housing having a first end with a first aperture for supporting an eyepiece lens, and a second end with a second aperture for supporting an objective lens;

an eyepiece lens disposed in said first end of said housing; and

an objective lens disposed in said second end of said housing;

said objective lens having a non-circular shape, wherein at least two oppositely disposed arcuate first peripheral edges are defined by a first radius extending from a first center, and wherein at least two oppositely disposed arcuate second peripheral edges are defined by at least one second radius extending from at least a second center not coincident with said first center, said second radius having a length different from said first radius.

2. (Original) The magnification loupe of claim 1, wherein said second peripheral edges are semi-elliptical in shape.

3. (Original) The magnification viewer of claim 1, wherein said eyepiece lens comprises a single lens element, and wherein said objective lens comprises two lens elements.

4.(Currently Amended) The magnification loupe of claim 3, wherein said eyepiece lens and said objective lens are constructed and arranged according to the following parameters:

Element	Glass	n_d	n_d	Radius	Thickn ess	<u>Maximum Diameter</u>	Sep.
I	Schott NSK5	1.589	61.3	$R_1=[00] \infty$ $R_2=[00] \infty$	2.2	12.0	
II	Schott NBK7	1.517	64.2	$R_3=36.49$ $R_4=18.48$	1.5	12.0	$S_1=0.6$
III	Schott NSF56	1.805	25.4	$R_5=85.68$ $R_6=39.71$	1.6	$D_1=22.24$ $D_2=23.60$	$S_2=14.46$
IV	Schott NBK7	1.517	64.2	$R_7=39.71$ $R_8=21.55$	6.65	$D_3=23.60$ $D_4=23.60$	

wherein the radius, thickness, and separation dimensions are given in millimeters;

Roman numerals identify the lens elements in their respective order from the eyepoint side to the object side and element I is a representative lens of the user wearable device;

n_d represents the refractive index of each element; n_d is the abbe dispersion number; R_1 , R_2 , etc. represent the radii of the respective refractive surfaces in order, from the eyepoint side to the object side; D_1 , D_2 , etc. represent the maximum diameters of the lens elements; and S_1 , S_2 represent the air space between the elements, measured along [[the]] an optical centerline.

5. (Currently Amended) The magnification loupe of claim 3, wherein said eyepiece lens and said objective lens are constructed and arranged according to the following parameters:

Element	Glass	h_d	n_d	Radius	Thickness	Maximum Diameter	Sep.
I	Schott NSK5	1.589	61.3	$R_1=98.19$ $R_2=98.19$	3.0	25.4	
II	Schott NBALF4	1.580	53.9	$R_3=52.10$ $R_4=20.16$	1.5	$D_1=13.00$ $D_2=13.25$	$S=4.1$
III	O'Hara STIH23	1.785	26.3	$R_5=85.68$ $R_6=43.17$	1.8	26.15	$S=13.59$
IV	Schott NBK7	1.517	64.2	$R_7=43.17$ $R_8=22.39$	7.6	26.15	

wherein the radius, thickness, and separation dimensions are given in millimeters;

Roman numerals identify the lens elements in their respective order from the eyepoint side to the object side and element I is a representative correction lens; h_d represents the refractive index of each element; n_d is the abbe dispersion number; R_1 , R_2 , etc. represent the radii of the respective refractive surfaces in order, from the eyepoint side to the object side; D_1 , D_2 , etc. represent the maximum diameters of the lens elements; and S_1 , S_2 represent the air space between the elements, measured along the an optical centerline.

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6. (Original) The magnification loupe of claim 1, further comprising a correction lens couplable to said housing proximate said first end.

7. (Currently Amended) The magnification loupe of claim 6, wherein said correction lens is interchangeably coupled to said housing, whereby said correction lens ~~may be~~ is selectively removed from said housing and replaced with a different correction lens to thereby vary a working distance of the loupe.

8. (Currently Amended) The magnification loupe of claim 1, wherein said housing is configured for mounting through a lens of the ~~spectacles~~ user wearable device.

9. (Currently Amended) The magnification loupe of claim 1, wherein said housing is configured to be mounted to the ~~spectacles~~ user wearable device by a mounting member secured to a frame of the ~~spectacles~~ user wearable device.

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10. (Currently Amended) A magnification viewer, comprising:

a user wearable device having a frame and at least one eyeglass lens supported on said frame; and

at least one magnification loupe operatively coupled to said user wearable device, said magnification loupe comprising:

a housing having a first end with a first aperture for supporting an eyepiece lens, and a second end with a second aperture for supporting an objective lens, an eyepiece lens disposed in said first end of said housing, and an objective lens disposed in said second end of said housing, said objective lens having a non-circular shape, wherein at least two oppositely disposed arcuate first peripheral edges are defined by a first radius extending from a first center, and wherein at least two oppositely disposed arcuate second peripheral edges are defined by at least one second radius extending from at least a second center not coincident with said first center, said second radius having a length different from said first radius.

11. (Currently Amended) The magnification viewer of claim 10, further comprising a correction lens interchangeably coupled to said housing proximate said first end, whereby said correction lens ~~may be~~ is selectively removed from said housing and replaced with a different correction lens to thereby vary a working distance of ~~the~~ said loupe.

12. (Currently Amended) A magnification loupe carried by a user wearable device,
comprising:

a housing having a first end with a first aperture for supporting an eyepiece
lens, and a second end with a second aperture for supporting an objective lens;

a single element eyepiece lens disposed in said first end of said housing;

and

a two element objective lens disposed in said second end of said housing;

Element	Glass	h_d	n_d	Radius	Thickness	Maximum Diameter	Sep.
I	Schott NSK5	1.589	61.3	$R_1=00 \infty$ $R_2=00 \infty$	2.2	12.0	
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IV	Schott NBK7	1.517	64.2	$R_7=39.71$ $R_8=21.55$	6.65	$D_3=23.60$ $D_4=23.60$	

said eyepiece lens and said objective lens constructed and arranged

according to the following parameters:

wherein the radius, thickness, and separation dimensions are given in millimeters;

Roman numerals identify the lens elements in their respective order from the eyepoint

side to the object side and element I is a representative lens of the user wearable device;

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n_d represents the refractive index of each element; n_d is the abbe dispersion number; R_1 , R_2 , etc. represent the radii of the respective refractive surfaces in order, from the eyepoint side to the object side; D_1 , D_2 , etc. represent the maximum diameters of the lens elements; and S_1 , S_2 represent the air space between the elements, measured along the an optical centerline.

13. (Currently Amended) A magnification loupe carried by a user wearable device,
comprising:

a housing having a first end with a first aperture for supporting an eyepiece
lens, and a second end with a second aperture for supporting an objective lens;

a single element eyepiece lens disposed in said first end of said housing;

and

a two element objective lens disposed in said second end of said housing;

said eyepiece lens and said objective lens constructed and arranged
according to the following parameters:

Element	Glass	h_d	n_d	Radius	Thickness	<u>Maximum</u> Diameter	Sep.
I	Schott NSK5	1.589	61.3	$R_1=98.19$ $R_2=98.19$	3.0	25.4	
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III	O'Hara STIH23	1.785	26.3	$R_5=85.68$ $R_6=43.17$	1.8	26.15	$S=13.59$
IV	Schott NBK7	1.517	64.2	$R_7=43.17$ $R_8=22.39$	7.6	26.15	

wherein the radius, thickness, and separation dimensions are given in millimeters;

Roman numerals identify the lens elements in their respective order from the eyepoint
side to the object side; h_d represents the refractive index of each element; n_d is the abbe
dispersion number; R_1 , R_2 , etc. represent the radii of the respective refractive surfaces in

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order, from the eyepoint side to the object side and element I is a representative correction lens; D_1 , D_2 , etc. represent the maximum diameters of the lens elements; and S_1 , S_2 represent the air space between the elements, measured along the an optical centerline.